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FUNGI SELECTI GUATEMALENSES. EXSICCATI DECADE I.*

W. A. KELLERMAN.

It is proposed to issue from time to time small sets of Guatemalan fungi which may be of some interest. There will be a number of new species included, and many peculiar tropical forms, and others to illustrate new hosts, variations or extended distribution. The sets will not be offered for sale, but it is intended that the edition may be ample for the larger herbaria in case the specimens are desired. The first decade includes the following:

1. Graphiola phoenicis (Moug.) Poit., on Thrinax sp. indet.
2. Melampsora bigelowii Thüm., on Salix humboldtiana H. B. K.
3. Puccinia cannae (Wint.) P. Henn., on Canna indica L.
4. Puccinia cognita Syd., on Senecio fraseri Hemsl.
5. Puccinia cynanchi Lagerh., on Philibertiella crassifolia Hemsl.
6. Puccinia heterospora B. & C., on Sida cordifolia L.
7. Puccinia rosea (D. & H.) Arthur, on Ageratum conyzoides L.
8. Ravenelia humphreyana Diet., on Poinciana pulcherrima L.
9. Ravenelia spinulosa Diet. et Holw., on Cassia biflora L.
10. Ustilago panici-leucophaei Bref., on Panicum leucophaeum H. B. K.

1. Graphiola phoenicis (Moug.) Poit.

On Thrinax sp. indet.

Gualan (alt. 122 m., 400 ft.) Dept. Zacapa, Guatemala, Central America. Jan. 15, 1905.
W. A. Kellerman, No. 4633.

This fungus of doubtful affinity is common in green houses the world over occurring on different species of Palms. In Guatemala the parasite was found in only one locality but it was very abundant, practically all the plants in the low, wet ground where the host occurred being affected.

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* Contributions to Guatemalan Mycology. III.

2. Melampsora bigelowii Thuem.

On Salix humboldtiana H.B.K.

Near Patalúl, Dept. Sololá, Guatemala, C. A. Feb. 11, 1906.

W. A. Kellerman, No. 5418.

The host determined by R. F. Griggs and the fungus by J. C. Arthur. The salix occurs very commonly throughout Guatemala, and in very many of the localities the Rust was observed.

3. Puccinia cannae (Winter) P. Henn. Uredospores.

On Canna indica L.

Mazatenango, Guatemala, C. A. Feb. 28, 1905.

W. A. Kellerman, No. 5357.

The teleutospores were reported by P. Hennings on material collected in Brazil, and hence the name as above; but only Uredospores were seen on the Guatemalan host, corresponding to the *Uredo cannae* Winter. Unfortunately the specimens are badly parasitized, as is commonly the case with tropical Uredineae.

4. Puccinia cognita Syd.

On Verbesina fraseri Hemsl.

Guatemala City (alt. 1465 m. 4810 ft.), Guatemala. Feb. 1, 1905.

W. A. Kellerman, No. 4324.

The host was determined by B. L. Robinson. Our determination of the fungus was verified by J. C. Arthur. This is a common Rust on a host plant quite widely distributed and abundant.

5. Puccinia cynanchi Lagerh.

On Philibertiella crassifolia Hemsl.

(Host det. John Donnell Smith.)

Laguna (Lake Amatitlán), alt. 1200 m. (3950 ft.) Depart. Amatitlán, Guatemala, C. A. Feb. 11, 1905.

W. A. Kellerman, No. 4348.

There is close morphological resemblance between Puccinia gonolobi Rav. and Puccinia cynanchi Lagerh., and they occur on many hosts. Not willing to call my material by either of these names, and temporarily designating this rust as Puccinia philibertiellicola I referred the matter to Dr. J. C. Arthur who gave the name as used on this label, stating in a letter dated August 14, 1906, as follows: "I have it on the same host collected by Pringle in Oaxaca, Mex. There is considerable difference in the habit and appearance of the different collections and on different hosts, but I find no constant morphological characters with which to separate them. I have provisionally, however, assorted my material under two names P. Gonolobi, where the fungus is in small groups, and P. Cynanchi, where it spreads evenly over the surface, often extending along the young shoots as they grow, and sometimes forming witches' brooms. I have the former on five, and the latter on nine different hosts." (J. C. Arthur.)

6. Puccinia heterospora B. & C.

On Sida cordifolia L.

Gualán (alt. 122 m. 400 ft.) Dept. Zacapa, Guatemala, Central America. March 12, 1905.
W. A. Kellerman, No. 4323.

The host was identified by John Donnell Smith, and the determination of the fungus verified by J. C. Arthur. This is a widely distributed species in warm, temperate and tropical countries, occurring in Africa, India, China, Australia, the Philippines as well as in the American continent. Reported hosts are numerous. The variations are considerable; "Man ist leicht geneigt, wenn man die extremen Habitusformen vor sich hat, dieselbe darauf hin in mehrere Arten zu zerlegen; dass Pucc. heterospora veilleicht auf Grund von Kulturversuchen noch in mehrere Species zu trennen wäre, möchten wir eher verneinen als bejahen" (Sydow. Monogr. Ured.)

7. Puccinia rosea (D. & H.) Arthur.

On Ageratum conyzoides L.

San Felipe (alt. 615 m., 2050 ft.), Dept. Retalhuleu, Guatemala, C. A. Feb. 4, 1906.
W. A. Kellerman, No. 5446.

The host species was observed at several places in Guatemala, on the Pacific slope. The plants were abundantly affected with this Rust, which has been identified by Arthur and Kern as given above. The vitality of the host is more or less impaired by the parasite. The Rust has been collected heretofore by E. W. D. Holway in southern Mexico, on several species of Eupatorium and on Ageratum corymbosum and Ageratum strictum.

8. Ravenelia humphreyana P. Henn.

On Poinciana pulcherrima L.

Gualán (alt. 122 m. 400 ft.) Dept. Zacapa, Guatemala, Central America. Dec. 27, 1905.
W. A. Kellerman, No. 5727.

The host was determined by R. F. Griggs and the fungus by J. C. Arthur. The host is a common plant in many parts of Guatemala and it was found usually to be abundantly affected, though no effect on the vitality or vigor of the host could be detected.

9. Ravenelia spinulosa Diet. et Holw.

On Cassia biflora L.

Gualán (alt. 122 m., 400 ft.), Depart. Zacapa, Guatemala, Central America. Dec. 30, 1905.
W. A. Kellerman, No. 5441.

The host was determined by J. M. Greenman and the fungus by J. C. Arthur. This Cassia is common and very abundant at Gualán and many other places in Guatemala; scarcely a plant was found uninfected by the Ravenelia which however did not appreciably distort the host or check its growth.

10. Ustilago panici=leucophaei Bref.

On Panicum leucophaeum H.B.K.

Zacapa (alt. 137 m., 457 ft.) Depart. Zacapa, Guatemala, Central America. Jan. 25, 1905.
W. A. Kellerman, No. 4301.

The identification was made by Dr. G. P. Clinton. The smut was very abundant at this locality, infecting most of the plants found on the alluvial bottom where the material was obtained. The smut was seen also in abundance on the Pacific side of the country near Lake Amatitlan, alt. 1200 m. (3950 ft.). It has been reported from Mexico and from Cuba and Jamaica. Ustilago insularis P. Henn. regarded by Dr. G. P. Clinton as the same species, is from Rio de Janeiro, Brazil.